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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,167

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James G Moredock

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05/23/2011

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EXAMINER

MILLER, SAMANTHA A

ART UNIT

PAPER NUMBER

3749

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PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/553,167	<b>Applicant(s)</b> MOREDOCK ET AL.	
	<b>Examiner</b> SAMANTHA MILLER	<b>Art Unit</b> 3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 08 March 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/8/2011</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Response to Amendment***

The amendment filed on 3/8/2011 is acknowledged.

### ***Information Disclosure Statement***

The information disclosure statement (IDS) submitted on 3/8/2011 is acknowledged. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 states "wherein the system includes at least one component defining a portion of the flow path through the system, which component is separable from the system" it is unclear what applicant's component is.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-5, 9-10, and 12-15** are rejected under 35 U.S.C. 103(a) as being unpatentable over VANDERAUWERA (5,545,241) in view of MOREDOCK (6,319,304).

VANDERAUWERA teaches:

Claim 1. A flow path extending through the system from an inlet (20) to an outlet (26); to draw particulate debris laden air into the inlet and rotate it about an axis (axis of 100 and 12) to form a rotating flow (starts rotating by 24) that stratifies the debris laden air with the heaviest particles in the outermost orbits (along the exterior of 100) of the rotating flow (col.4 ll.36-49); an ejector port (70) for ejecting particulate debris laden air from the stratified rotating flow in the system (col.4 ll.36-49); an air filter (100) located within the rotating flow and across the flow path upstream of the ejector port and the outlet (26) for filtering air from the innermost orbits (air enters the center of filter 100) of the stratified rotating flow air filter being the direction of said axis (to outlet along the axis of 100, Fig.4) so that the rotating flow about the filter causes a self cleaning action on the filter (since the air flow path through the filter is the same as applicant it will cause a self cleaning action on the filter same as applicant); wherein the system includes at least one component (16) defining a portion of the flow path through the system, which component is separable from the system (separated and attached by 56) (Fig.1 and Fig.2).

Claim 2. The at least one component (housing 16) is selected from the group consisting of a detachable fan housing containing the motor-driven fan and a detachable filter housing containing the air filter (housing 16 is a detachable filter housing containing the air filter (100), Fig.4).

Claim 3. The at least one component includes both a detachable fan housing (in combination housing 14 would house a fan) and a detachable filter housing (16) (detached by 56, Fig.1).

Claim 4. The fan housing (in combination housing 14 would house a fan) and the filter housing (16) are detachably connected to each other (by 56, Fig.1).

Claim 5. An intermediate pipe assembly (80) forming a portion of the flow path, the fan housing (14) and the filter housing (16) being detachably connected to respective ends of the intermediate pipe assembly (Fig.1 and Fig.4).

Claim 9. A compression assembly (24) located in the fan housing (14 in combination would be the fan housing) for compressing the volume of the rotating flow of debris laden air to increase the air velocity and centrifugal force acting on the airborne particles.

Claim 10. The compression assembly (24) provides support for the motor-driven fan (in combination with the fan being at the inlet).

Claim 12. A separator-ejector chamber (chamber between 50 and 100) in the flow path downstream of the motor-driven fan (in combination since the fan would be taught at inlet 20), the outermost orbits of the rotating flow riding on an outer wall (wall of 50) of the separator-ejector chamber to the ejector port.

Claim 13. The filter (100) is located centrally within the separator-ejector chamber (Fig.4).

Claim 14. The at least one component (16) which is separable from the system includes a filter housing (16) detachably connected to the system (by 56), the filter

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housing containing the separator-ejector chamber (between 50 and 100), air filter (100) and the ejector port (70).

Claim 15. An outer peripheral surface of the elongated filter (100) is cylindrical (Fig.4).

VANDERAUWERA teaches the invention above including having forced air in the inlet (20), however VANDERAUWERA does not teach a motor-driven fan.

MOREDOCK teaches:

Regarding claim 1; a motor-driven fan (13) located along the flow path (Fig.1B) (col.3 ll.52-61).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the inlet of VANDERAUWERA in view of the fan taught by MOREDOCK in order to draw debris laden air into the precleaning system (MOREDOCK, col.2 ll.11-13).

**Claims 6-8 and 11** are rejected under 35 U.S.C. 103(a) as being unpatentable over VANDERAUWERA (5,545,241) in view of MOREDOCK (6,319,304) in further view of MOREDOCK (6,406,506).

VANDERAUWERA in view of the MOREDOCK 304' patent teaches the invention above, however VANDERAUWERA in view of the MOREDOCK 304' patent does not teach a compression assembly with a plurality of stationary vanes.

The MOREDOCK 506' patent teaches:

Claim 6. A compression assembly (58) located in the filter housing (in combination back housing 24 would be the filter housing) upstream of the air filter (in combination VANDERAUWERA teach the back housing (16) having filter (100)) for compressing the volume of the rotating flow of debris laden air to increase the air velocity and centrifugal force acting on the airborne particles (col.3 ll. 60-67 and col.4 ll.14-17).

Claim 7. The compression assembly provides support for an upstream end of the air filter (in combination air would have to go through the vanes 58 taught by MOREDOCK 506' in order to get to the filter 100 taught by VANDERAUWERA).

Claim 8. The compression assembly includes a plurality of stationary vanes (58) in the flow path (Fig.5).

Claim 11. The compression assembly includes a plurality of stationary vanes (58) in the flow path.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the filter housing of VANDERAUWERA in view MOREDOCK (6,319,304) in view of the compression assembly or stationary vanes taught by MOREDOCK (6,406,506) in order to increase the centrifugal force which urges foreign objects in the radially outwardly (MOREDOCK (6,406,506); col.4 ll.14-16) in order to efficiently clean the air.

**Claims 16 and 20-22** are rejected under 35 U.S.C. 103(a) as being unpatentable over ROCKLITZ (6,451,080) in view of VANDERAUWERA (5,545,241).

ROCKLITZ teaches:

16. A flow path extending through the system from an inlet (40) to an outlet (after filter 26 to engine 22, Fig.1); a motor-driven fan (46) located along the flow path to draw particulate debris laden air into the inlet and rotate it about an axis to form a rotating flow that stratifies the debris laden air with the heaviest particles in the outermost orbits (to 48) of the rotating flow; an ejector port (48) for ejecting particulate debris laden air from the stratified rotating flow in the system; and an intermediate pipe assembly (25) forming a portion of the flow path between the motor-driven fan and the air filter (26) so the fan and filter can be remote from one another (Fig.1).

20. A fan housing (24) containing the motor-driven fan (46), the fan housing being detachably connected to an upstream end of the pipe assembly (25) (at 44, Fig.3).

21. A filter housing containing the air filter, the filter housing (26) being detachably connected to a downstream end of the pipe assembly (25) (Fig.1).

22. Forming a powered air cleaning system as a plurality of components, each defining a respective portion of a flow path through the system from an inlet (40) to an outlet (at 26 to 22), the components including first (housing of 24) and second components (housing of 26), the first component (housing of 24) having a motor-driven fan (46) located along the flow path to draw particulate debris laden air into the inlet and rotate it about an axis to form a rotating flow that stratifies the debris laden air with the heaviest particles in the outermost orbits of the rotating flow (to 48), and separately mounting the first and second components in remote locations (Fig1) in a device to be supplied with clean air; and interconnecting the flow path through the first and second



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components with an intermediate pipe assembly (25) which forms a portion of the flow path of the system (Fig.1).

ROCKLITZ teaches the invention as described above including the filter is upstream of outlet for filtering air from the innermost orbits of the stratified rotating flowing, however ROCKLITZ does not teach the filter located within the rotating flow and across the flow path upstream of the ejector port, second component having a separator-ejector chamber

VANDERAUWERA teaches:

Claims 16; an air filter (100) located within the rotating flow and across the flow path upstream of the ejector port (70) and the, elongated in the direction of said axis so that the rotating flow about the filter causes a self cleaning action on the filter, or the air filter being elongated in the direction of said axis so that the rotating flow about the filter causes a self cleaning action on the filter (col.4 ll.36-49).

Claim 21. and the second component (filter housing 16) having a separator-ejector chamber (between 50 and 100) in the flow path downstream of the motor-driven fan (in combination since it would be in the filter housing 26 of ROCKLITZ which is downstream of fan housing 24), separator-ejector chamber having an ejector port (70) for ejecting particular debris laden air from the stratified rotating flow in the system and an air filter (100) located within the separator-ejector chamber and across the flow path upstream of the ejector port and the outlet (center of 100 which in combination would lead to engine 22 of ROCKLITZ) for filtering air from the innermost orbits of the stratified

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rotating flow, the air filter being elongated in the direction of said axis so that the rotating flow about the filter causes a self cleaning action on the filter (col.4 ll.36-49).

Claim 22. Separately mounting the first (housing of 24) and second (housing of 26) components in remote locations (Fig.1) in a device to be supplied with clean air; and interconnecting the flow path through the first and second components with an intermediate pipe (25) assembly which forms a portion of the flow path of the system (Fig.1).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the filter housing of ROCKLITZ in view of the filter and ejector port taught by VANDERAUWERA in order to efficiently operate since the scavenge (separator-ejector chamber and ejector port) should be place at a lowermost portion of the air cleaner housing (VANDERAUWERA, col.1 ll.41-44).

**Claims 17-19 and 23** are rejected under 35 U.S.C. 103(a) as being unpatentable over ROCKLITZ (6,451,080) in view of VANDERAUWERA (5,545,241) in further view of MOREDOCK (6,406,506).

ROCKLITZ (6,451,080) in view of VANDERAUWERA (5,545,241) teaches the invention above, however ROCKLITZ (6,451,080) in view of VANDERAUWERA (5,545,241) does not teach a compression assembly or a plurality of stationary vanes.

MOREDOCK teaches:

17. A compression assembly (made of 58) located along the flow path between the intermediate pipe assembly and the air filter (in combination since the vanes would

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be surrounding filter 100 taught by VANDERAUWERA) for compressing the volume of the rotating flow of debris laden air to increase the air velocity and centrifugal force acting on the airborne particles (col.3 ll. 60-67 and col.4 ll.14-17).

18. The compression assembly (made of 58) provides support for an upstream end of the air filter in the flow path of the system (in combination air would have to go through the vanes 58 taught by MOREDOCK 506' in order to get to the filter 100 taught by VANDERAUWERA).

19. The compression assembly includes a plurality of stationary vanes (58) in the flow path (Fig.5).

23. A compression assembly (made of 58) in the second component upstream of the air filter for compressing the volume of the rotating flow of debris laden air to increase the air velocity and centrifugal force acting on the airborne particles (in combination air would have to go through the vanes 58 taught by MOREDOCK 506' in order to get to the filter 100 taught by VANDERAUWERA).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the filter housing of ROCKLITZ (6,451,080) in view of VANDERAUWERA (5,545,241) in view of the compression assembly or stationary vanes taught by MOREDOCK (6,406,506) in order to increase the centrifugal force which urges foreign objects in the radially outwardly (MOREDOCK (6,406,506); col.4 ll.14-16) in order to efficiently clean the air.

***Response to Arguments***

Applicant's arguments with respect to claims 1-23 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAMANTHA MILLER whose telephone number is (571)272-9967. The examiner can normally be reached on Monday - Thursday 8:00 - 4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve McAllister can be reached on 571-272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Samantha A Miller/  
Examiner, Art Unit 3749

5/17/2011

/STEVEN B. MCALLISTER/  
Supervisory Patent Examiner, Art Unit 3749